AYDIN DISPLAYS
a sparton company

CAMBRIDGE
USERS MANUAL
CFP/CFL19 Series
CFP19C1 Chassis Standard
CFL19P1 IP65 Panel Mount Standard
CFL19R2 Rack Mount Standard

LCD Monitor User Guide

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1 Display Setup

Section

Product Safety Precautions

Safety Precautions

CAUTION: SHUT OFF YOUR TOUCH SCREEN BEFORE CLEANING!!

IF YOUR DISPLAY HAS A TOUCH SCREEN PANEL, THE SCREEN WILL BE ACTUATED BY CLEANING. PRESSING ON THE SCREEN WHILE CLEANING WILL BE SEEN AS A TOUCH TO THE SYSTEM WHICH COULD CREATE A POTENTIALLY DANGEROUS CONDITION!

- Do not attempt to service this display yourself. The rear chassis has a seal so that non-qualified personnel will not expose themselves to dangerous voltages or other risks.
- To protect from electrical shock, unplug the display power supply from the wall before moving.
- Do not use this display near water.
- Do not place any heavy objects on the power cords. Damage may cause electrical shock.
- Unplug the power supply from the wall or unit if one of the following conditions exists:
  - Power cord or plug is damaged or frayed.
  - Liquid is spilled into the display or the display is exposed to rain or water.
  - The display does not operate normally when the operating instructions are followed.
  - The display has been dropped or the enclosure has been damaged.
  - The display exhibits a distinct change in performance, indicating a need for service.
- Ensure that sufficient space is available around the display to provide air circulation for cooling.
- Ensure that the ambient air temperature will not exceed the specified maximum temperature.
- Do not expose the display to direct sunlight or heat.

Included Parts

Open shipping container and lay all components on a flat clean surface.
Your LCD monitor package will consist of the primary components listed below:

- LCD Monitor
- 6 ft Video Cable
- 110/220VAC Brick & Cord (optional)
- OSD Control Box
- 6 ft RS-232 Touch Interface Cable (touch screen units only)
- 6 ft USB Touch Interface Cable (touch screen units only)
- Documentation and Driver CD ROM
- Users Manual

Connecting Your Display

1. Connect all cables to the computer first. This includes the VGA cable, and if the unit has a touch screen, the RS-232 serial or the USB touch screen connection. This unit may also have optional video which provides NTSC and S-Video connections.

2. The standard unit is provided with a +12VDC input power connector. The customer can attach +12VDC or use the external brick supplied in the accessory kit (optional). The Brick is a 120/220VAC unit that adapts to AC on the one end and a +12VDC connection on the other end.

3. Some Models will have an internal 115/220VAC power supply; applying power in this case requires only a power cord.

After connecting the cables between the LCD monitor and the computer, connect the +12VDC source, the external brick, or the AC cord and apply power.

4. The LCD will immediately power up.

5. If your computer is off, turn on your computer.

6. Your display should now operate as a normal computer display – displaying the computers BIOS screens and booting into Windows or other operating system.

NOTE: If for any reason the display goes blank and/or displays an “Out of Range” or “No Input Signal” message on the screen, your computer or video source may be putting out a signal that is incompatible with the LCD monitor. If this happens, you will need to adjust the computer to output a compatible video signal.

Below are the most common reasons a display may not operate correctly:

1. The resolution is too high or low for the LCD or wrong sync signal configuration is provided.
2. The refresh rate is set too high. Refresh on an LCD is different than a CRT. Set the refresh to 60Hz. CRT’s need a high refresh rate to avoid flicker. The refresh rate has no impact on an LCD.
3. The power source is incorrect, or there is no power. Check if the rear LED is ON or blinking. If the LED is not lit, check to be sure there is power to the unit.
4. The unit is malfunctioning. If you believe this to be true, disconnect the video cable from the rear of the LCD and connect to a known good display. If an alternate display operates correctly, and the video is in a compatible range then contact Aydin Displays, Inc. technical support.

2 Getting Started

Section

Display Features

- The LCD is capable of displaying 16.7M colors in a continuous spectrum.
- The LCD adjusts the display to VGA (640 x 480) or SXGA (1280 x 1024).
- The LCD is supplied with an Anti-Glare Touch Screen or an Anti-Glare impact window on non touch screen models.
- The LCD is provided with Rear or Detachable OSD.

Adjusting the Display

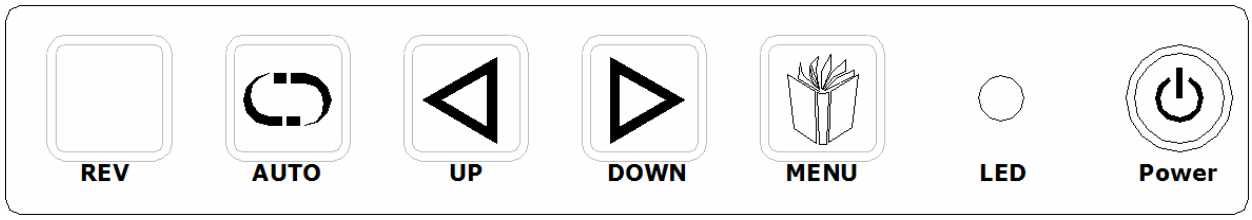
The LCD display has an embedded microprocessor in the converter card which is the electronics that drives the LCD. In most cases the unit will require very little, if any, user intervention to operate correctly - that is to produce a sharp stable picture. The micoprocessor in the display has the capability to adjust itself to the computer to which it is attached. If the picture is not satisfactory, the first step is to allow the unit to attempt to adjust itself to your computer.

The membrane keypad used for adjusting the display is below:

OSD (On Screen Display) Layout & Function

OSD Adjustments

The user membrane OSD buttons are located on the rear of the unit and are detachable and remotable. Rack mount OSD buttons are located on the front of the unit. The OSD buttons allow navigation to all user required adjustments.



OSD Membrane Layout

In order to access all OSD functions, you press the **MENU** button, and then scroll up and down with the **UP/DOWN** button for the desired function. Depress the **MENU** button. You can now use the **UP**/**DOWN** button to select the desired setting. When done, scroll through the menu until reaching **EXIT**.

HOT KEYS

Name of Key	When OSD is not Active	When OSD is Active
POWER	Power on/off	Power on/off
MENU	Pop-up OSD menu	Confirm select or exit function
DOWN	Pop-up brightness menu	Decrease the value of OSD function
UP	Pop-up contrast menu	Increase the value of OSD function
AUTO	Auto tuning size, centers…	No function

The display unit with VGA+Video or VGA+Video+DVI functions under Video mode

HOT KEYS

Name of Key	When OSD is not Active	When OSD is Active
POWER	Power on/off	Power on/off
MENU	Pop-up OSD menu	Confirm select or exit function
DOWN	Pop-up brightness menu	Decrease the value of OSD function
UP	Pop-up contrast menu	Increase the value of OSD function
AUTO	Input source select	No function

The display unit with VGA+DVI or VGA+Video+DVI function under DVI mode

HOT KEYS

Name of Key	When OSD is not Active	When OSD is Active
POWER	Power on/off	Power on/off
MENU	Pop-up OSD menu	Confirm select or exit function
DOWN	Pop-up brightness menu	Decrease the value of OSD function
UP	Pop-up contrast menu	Increase the value of OSD function
AUTO	No function	No function

OSD Menu Operation
Under VGA & DVI mode:
Press the **MENU** button to active Main Menu:

MAIN MENU	Range	Default
BRIGHTNESS	0 to 100	50
CONTRAST	0 to 100	57
DISPLAY ADJUST **	Sub-1	
COLOR TEMPERATURE	Sub-2	
LANGUAGE	Sub-3	
OSD ADJUST	Sub-4	
INPUT SELECTION	Sub-5	
RESET		
EXIT		

** Under DVI mode, there is no function for **DISPLAY ADJUST**.

Move the highlight to desired item by the **UP/DOWN** button.
Press **MENU** button to select, and then go to sub-menu.
Or use the **UP/DOWN** button to adjust.

Sub-1

DISPLAY ADJUST	Range	Default
V-POSITION	0 to 100	50
H-POSITION	0 to 100	50
PITCH	0 to 100	50
PHASE	0 to 100	by panel
SHARPNESS	0 to 100	0
AUTO TUNING		
RECALL		
RETURN		

Sub-2

COLOR TEMPERATURE
9300K
7500K
6500K
USER PRESET
RECALL
RETURN

Color	Range	Default
RED	0 to 100	50
GREEN	0 to 100	50
BLUE	0 to 100	50
RETURN		

Sub-3

LANGUAGE
ENGLISH
SPANISH
GERMAN
ITALIAN
FRENCH
CHINESE
RETURN

Sub-4

OSD ADJUST	Range	Default
OSD H-POS	0 to 100	50
OSD V-POS	0 to 100	50
OSD TIMER	4 to 104	20
OSD TRANSPARENCY	0 to 100	54
TEA TIME	OFF/30MIN/60/90/ 2 HOUR/DEMO	OFF
RECALL		
RETURN		

Sub-5

INPUT SELECTION
VGA IN
VIDEO IN **
S-VIDEO **
DIGITAL **
RETURN

** The item will not show if hardware is not present!!

Under Video or S-Video mode:
Press the **MENU** button to active Main Menu:

VIDEO ADJUST	Range	Default
CONTRAST	0 to 100	53
BRIGHTNESS	0 to 100	50
COLOR	0 to 100	50
SHARPNESS	0 to 100	0
HUE	0 to 100	50
INPUT TYPE	4:3/16:9	4:3
INPUT SELECT	Sub-1	
RECALL		
EXIT		

Move the highlight to desired item by the **UP/DOWN** button.
Press **MENU** button to select, and then go to sub-menu.
Or use the **UP/DOWN** button to adjust.

Sub-1

INPUT SELECTION
VGA IN
VIDEO IN **
S-VIDEO **
DIGITAL **
RETURN

** The item will not show if hardware is not present!!

3 Touch Screen Set-up

Section

Introduction to Touch Screens

Touch screen interfaces have become the standard interface in the past 5 years. They are rugged, reliable, extremely flexible and easier than ever to implement! The universal acceptance of the Windows GUI (Graphical User Interface) along with the extensive use of a mouse interface has significantly accelerated the use of a touch interface. Think of your touch screen as if it were a mouse.

Touch Screens Provided

5 Wire Resistive	RS-232 or USB
Capacitive	RS-232 or USB
SAW	RS-232 or USB

Touch Screens and Special Drivers

Software drivers for touch screen systems are provided in the Aydin Displays, Inc. accessory kit. It is always good to download the latest drivers from the respective web sites.

Refer to the individual manufacturer's documentation or contact the manufacturer to obtain special drivers:

- 3M Touch

Additional drivers, manuals and instructions for touch systems can be found at:
www.3m.com/3mtouchsystems

- Touch International

Additional drivers, manuals and instructions for touch systems can be found at:
www.touchintl.com

- ELO Touch

Additional drivers, manuals and instructions for touch systems can be found at:
www.elotouch.com/support/dnld.asp

Follow the manufacturer's instructions for installing special drivers.

4 Mounting Instructions

Section

Chassis Mounting Procedure

The chassis is provided with two top and two bottom mounting tabs so that the chassis can be mounted to the inside of a hole opening the size as shown in the mechanical drawing. The attachment can be from resident panel studs or screws from the front of the panel with nuts and washers from the rear.

The standard chassis comes with a tempered glass window as to protect the LCD (unless a touch screen is installed).
Front sealing, if necessary, is up to the customer.

Attach the power, video and touch screen cables (if applicable) to the side of the monitor.

Panel Mounting Procedure

The unit should be inserted into the opening per the dimension drawing. This will expose 12 female studs. The panel mount should be held in place by using the clips as shown below. Each clip has three holes. The center hole accepts a small 3mm screw. The outboard holes accept the larger 3mm screw which will put pressure on the users metalwork outboard of the cut out. When all 12 clips are in place, this will put uniform pressure on the perimeter surface around the cut out securing the panel to a NEMA 4/IP65 seal.

Rack Mounting Procedure

All Aydin Displays, Inc. standard rack products conform to 1U Retma standards. The rack unit will mount directly to the front vertical risers in the rack cabinet. The display is flush with the rack panel (some are fitted with handles which protrude forward off the rack panel).

The rack unit is attached with hardware provided within the accessory kit. Once secured, the cables and power can be connected.

VESA Wall Mounting Procedure

The enclosed VESA wall product has a 100mm hole mounting in the rear so that a arm, table stand or other mounting bracket can be attached. No other connections are necessary.

Section 5 Troubleshooting Tips

No picture	The signal cable should be properly connected to the display and computer. Try disconnecting the video cable from the display and connecting to another display if available to confirm the presence of proper video. Make sure the power is connected to the proper AC source. Make sure the resolution mode is supported by the display and check display settings of the PC. Confirm that the video cable is not defective.

Image persistence	Image persistence occurs when a ghost of an image remains on the screen after the screen image has been changed. Unlike a CRT monitor, an LCD monitor's image persistence is not permanent. To erase an image ghost, turn the monitor off for several hours. What happens is that after extended periods of operation the liquid crystals "set". To avoid this condition, install a screen saver program on the computer.

Picture quality & image stability	Check for proper video cable for proper grounding and shielding. Check the signal source for proper signal. Check for proper adjustment of the phase and frequency controls. Check for proper recommended signal timing.

Green LED not lit	Check for proper power and power connections.

Display image is not properly sized	Press the "**Select**" button to Auto Adjust the display. Adjust the Vertical and Horizontal size controls via the OSD (Reference *OSD Adjustments*). Ensure that a supported mode is selected on the display card or system being used. Consult the display card or system manual for proper video.

Image will not adjust	Video timing outside of range. Use the on-screen menu to adjust the Clock Setting. Make sure timing is within VESA standard.

Slight distortion in text or graphics	Not working in native resolution.

Display is present but "bars" appear or roll across screen	Ground loop problem between computer and display. Interference from adjacent equipment.

Vertical shaded bars on screen image	Horizontal size is not properly adjusted. Adjust horizontal size.

Image is not stable	Monitor has incorrect or bad sync signals. Check for proper video cable installation. Replace suspected faulty cable. Check to ensure that the video source is within the display's operating range.

Section 6 Cleaning & Maintenance

Cleaning

Occasionally clean the display panel and cabinet with a soft cloth dampened (not soaked) with a mild (non-abrasive) glass cleaner. Keep turning a fresh side of the cloth toward the screen surface to avoid scratching it with accumulated grit.

NOTE: The solvent should be applied only to the cloth, **NOT** directly on the monitor screen.

Do not use paper products as they may scratch the surface. To minimize the risk of abrasion, allow the screen to air dry. Special care should be taken when cleaning a touch screen or polycarbonate shield that is installed over the screen. Abrasive and certain chemical cleaners can damage the surface.

Never use alcoholic or ammoniac cleaners to clean the polycarbonate shield or a touch screen.

Replacing a Line Cord

To avoid shock and fire hazards, the monitor's power cord should be replaced if the insulation becomes broken or if it develops a loose internal connection.

Other Maintenance

Qualified service personnel should perform all maintenance, except for the power cord replacement described above.

7 Appendices

Section

Appendix A – Video Pin Assignments

Pin assignments for the HD15 Video Connector

Pin 1	Red Video	Pin 9	No Connection
Pin 2	Green Video	Pin 10	Sync Ground
Pin 3	Blue Video	Pin 11	Not Used
Pin 4	Not Used	Pin 12	Bi-Directional Data
Pin 5	Return	Pin 13	Horizontal Sync
Pin 6	Red Video Ground	Pin 14	Vertical Sync
Pin 7	Green Video Ground	Pin 15	Data Clock (SCL)
Pin 8	Blue Video Ground		

Appendix B – RS-232 Pin Assignments

Pin assignment for the 9 Pin Optional Touch Screen Connector

Pin 1	DCD	Data Carrier Detect
Pin 2	RD (Rx)	Receive Data
Pin 3	SD (Tx)	Transmit Data
Pin 4	DTR	Data Terminal Ready
Pin 5	SG	Signal Ground
Pin 6	DSR	Data Set Ready
Pin 7	RTS	Request to Send
Pin 8	CTS	Clear to Send
Pin 9	NC	No Connection

Appendix C – NTSC/PAL and S-Video

S-Video

S-Video, originally known as "Y/C Separated Video", is one of the higher quality ways to transmit a television signal from a peripheral device (DVD player, PlayStation 2, etc.) to a television. The way S-Video works is that it separates the color information (Chrominance) from the brightness (Luminance). By doing this, it reduces things such as color bleeding and dot crawl and greatly increases the general clarity and sharpness of the picture. The reason for this is that televisions are designed to display separate **Luminance (Y)** and **Chrominance (C)** signals.

Composite Video

Composite Video (RCA or BNC) is the old "AV" standard connector. The common RCA connector is color-coded Yellow for Composite video. The term "yellow-plug video" is recommended to help cut down on confusion between "composite" and "component" (which sound alike).

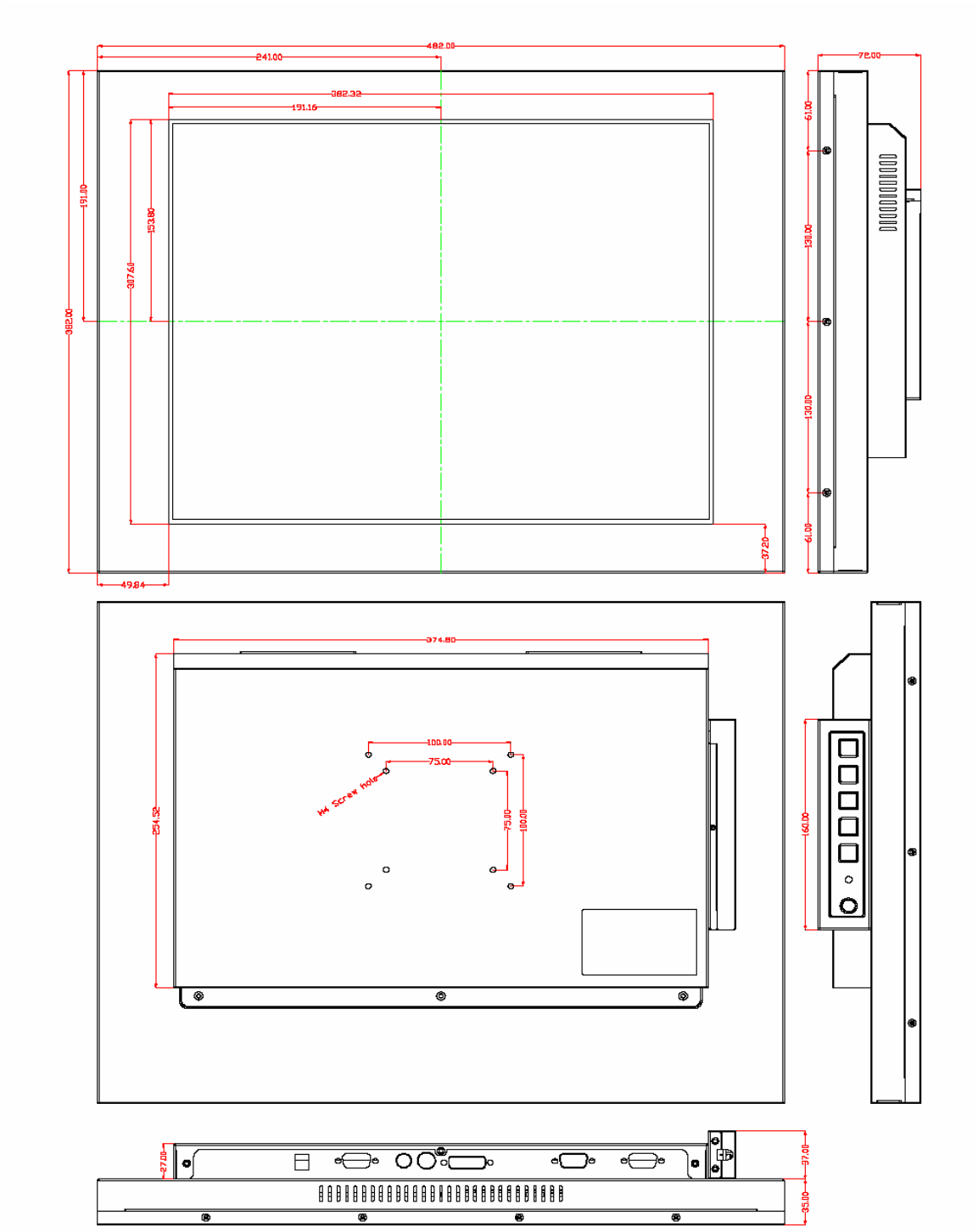
Appendix D – CFP/CFL19 Specifications

Active Screen Area	14.82” x 11.85” (376.32 x 301.06mm)
Pixel Pitch	.294mm
Response Time	4/12 ms typical
Brightness	250 nits (optional 400 nit)
Contrast	450:1
Max Screen Resolution	SXGA
PC Video Input	Separate Sync (5 Wire)
Screen Controls	Rear or Remote
Video (optional)	NTSC/PAL
Native Resolution (best picture)	SXGA
View Angle L / R	70/70
View Angle Up / Dn	70/70
Input Voltage	90 to 264VAC auto-switching; optional +12 or +24VDC
Current Draw	4.2a / 12VDC or .43a @ 115VAC
Input power	50W Max
Bezel Finish (Panel Mount & Wall Unit)	Black Textured
Auto Adjust	On Power Up, Manual
Resistive 5 Wire Touch	Optional
Capacitive Touch	Optional
SAW	Optional on Chassis and Wall
Touch Interface	RS-232 or USB
PC Video Interface	VGA (HD-15F) (female)
S-Video	Mini Din (female)
NTSC	RCA (female)
Colors	262,144
Operating Temp	0°C to 50°C
Storage Temp	-20°C to 60°C
Storage Humidity	10% to 95% relative humidity
Shock	30g’s, 11ms, ½ sine
Vibration	1g RMS 20 to 500Hz

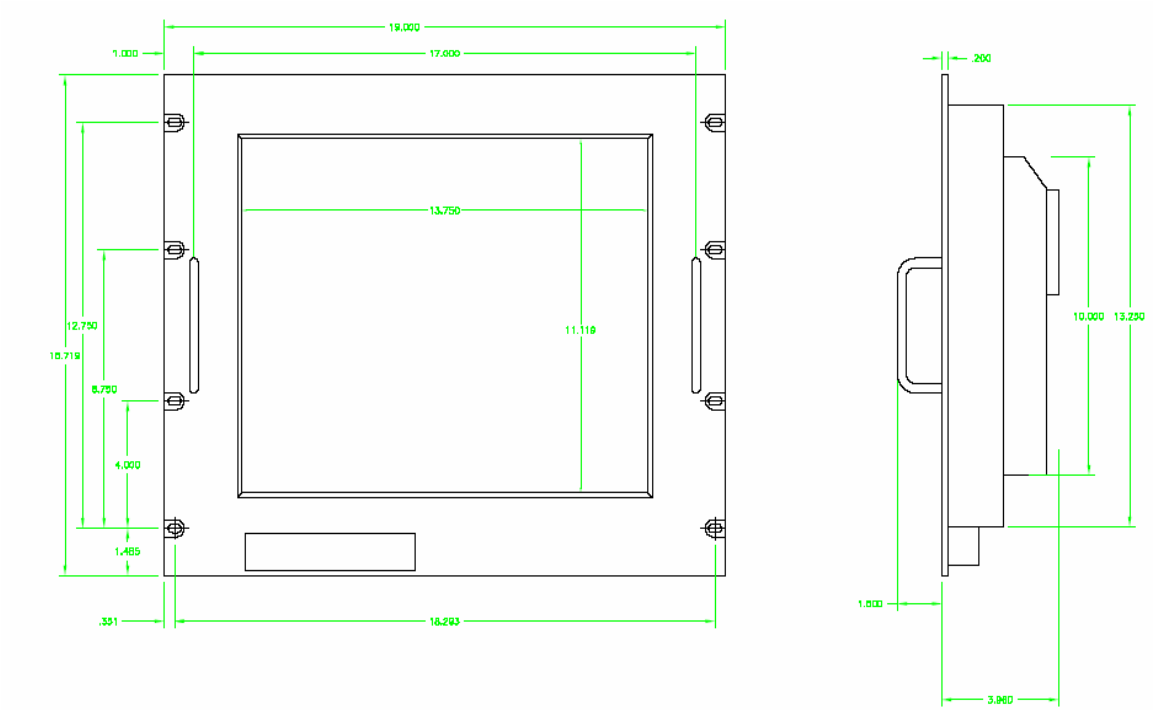
Appendix E – Mounting Dimensions
CFP19C1 Chassis Outline Dimensions

Unavailable

Appendix E – Mounting Dimensions
CFL19P1 Panel Mount Outline Dimensions



Appendix E – Mounting Dimensions
CFL19R2 Rack Mount Outline Dimensions



Appendix E – Mounting Dimensions
CFL19W1 VESA Wall Mount Outline Dimensions